

APPENDIX I.

CHARACTERS AND GENERAL MORPHOLOGY OF THE LEBBEK SCALE.

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Dactylopius * **perniciosus**, sp. n. (Newstead & Willcocks).

Ovisac of female (see fig. 2, p. 124). White, or rarely pale buff. Usually more or less reniform, rarely quite globular or more or less hemispherical; surface with well-marked transverse flutings and sometimes also with faint longitudinal striæ. The waxen plates and mealy secretion of the female are

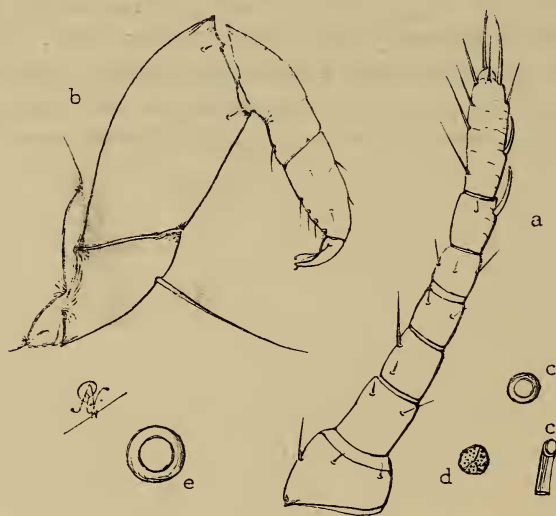


Fig. 10.—*Dactylopius perniciosus*, female; a, antenna; b, leg; c, d, e, spinnerets.

often visible on the exterior, more especially so in the earlier stages of the formation of the ovisac. When quite intact it has a closely felted appearance, but on the least disturbance the material is capable of stretching out.

* Fernald, Catalogue Coccidæ of the World, p. 96, gives *Pseudococcus*, Westwood (1841) priority. To adopt such a change in the nomenclature would lead to endless confusion in the literature of Economic Entomology; and for this reason the name which has been so long in use has been retained.

into long, viscous, elastic threads interwoven with a granular or mealy secretion, which latter disperses in the form of a little cloud of white smoke.

Length 3–5 mm.; rarely attaining a length of 7 mm.

Female adult. Dorsum covered with a thick layer of white, rarely pale buff, secretion, which when examined under a microscope is seen to consist of minute granular, and short curved hair-like, bodies. Colour, when completely denuded of the white secretion, black; integument smooth and shining. Body fluids deep brownish purple. Form of the early adult, ovate, tumid; segmentation distinct. Older examples at the period of parturition become much narrowed anteriorly, presenting a more or less pyriform or cordate outline. Antennæ short (fig. 10 *a*), of seven segments; but the seventh segment has often a pseudo-articulation in the middle, though in many individuals there is no visible indication of this; there is a large curved spine at the distal extremity of the sixth, and a similar spine in the middle of the seventh or immediately below the pseudo-articulation, when the latter is present; apex of last segment with several long spinose hairs, of which at least one is much stouter than the rest; hairs on remaining segments short and slender. Legs (fig. 10 *b*) very short and stout, being but a very little longer than the antennæ. Derm rather thickly studded with spinnerets, especially towards the anal extremity; these are of three types: a small circular form with long subcutaneous tubes (fig. 10 *c*); an irregular form (fig. 10 *d*); and a large circular form (fig. 10 *e*), also without subcutaneous tubes. Anal lobes and anal orifice normal. Mentum large, biarticulate, apex with many spinose hairs. Abdominal and thoracic "cicatrices" absent. Stigmata large, equal in length to the trochanters.

Length 2·50–4·75 mm.; width 2–3·75 mm.

Ovisac of male. This is formed of loose flocculent material.

Male. Slightly mealy or farinose. General colour dark brown with a tinge of red or purple. Head dull ochreous tinged with dusky brown. Eyes and ocelli ruby-red with a dark centre. Legs ochreous, with darker shadings. Wings and caudal filaments white. Some examples are of a generally darker colour than others, a character possibly due to age. Antennæ sparsely spinose, the spines being long and slender; there are also a few comparatively short hairs, but these are scattered and occur at much wider intervals than the spines. Legs spinose, the spines slender; but there are two at the distal extremity of the tibiæ which are longer and stouter than the rest. Ocelli two in number; these are placed on the lateral margin of the head.

Wing expanse 2·4 mm. Length of body 1·3 mm.

Pupa. Slightly farinose. Brown tinged with purplish red; wing-cases, antennæ and legs translucent, and almost glassy in appearance. Some examples have a white caudal mass of secretory matter, equal to one half of the length of the body. It is active or at least capable of locomotion;

this, however, is a character common to the pupæ of certain other members of the genus.

Average length 1 mm.

Larva. Farinose. Rich brown tinged with purplish; head, antennæ, legs and apex of abdomen inclined to ochreous, shaded with brown.

Ovum. Generally rich brown tinged with purplish, but some are decidedly paler than others, being inclined to ochreous brown. Cuticle smooth and slightly polished. Generally sparsely mealy and often with a few threads of the secretory matter of the ovisac attached thereto.

Length 0.38–0.40 mm.; diameter 0.22–0.24 mm.

Cockerell's *Dactylopius hymenocleæ** is very closely related to *D. perniciosus*. In both insects the pigment changes to a dark green colour when boiled in caustic potash. The ovisacs are also almost identical. In *D. perniciosus*, however, there is a total absence of the "dagger-shaped spines in the caudal region" (Cockerell, *l. c.*), and also the "minute denticle" on the ventral surface of the claw. This species may be further distinguished from *D. hymenocleæ* by the presence of well-marked spines on the antennæ.

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* Canadian Entomologist, xxxi, p. 267 (1891).